

# Kodak P20 Zoom Flash

## Zoom Flash P20

## P20 Zoomblitz

## Flash con zoom P20

## Flash externo P20

## Flash Zoom P20

## P20 줌 플래시

## P20 变焦闪光灯

## P20 變焦閃光燈

## P20 ズームフラッシュ



User's Guide  
Guide d'utilisation  
Benutzerhandbuch  
Manuale per l'utente  
Guía del usuario  
Guia do usuário  
사용자 설명서  
用户指南  
使用者手册  
ユーザーガイド

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## IMPORTANT SAFEGUARDS

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**⚠ CAUTION** Failure to observe the instructions marked by this symbol while handling the product may result in serious bodily injury or damage to property. Make sure to observe the instructions.

### CAUTION

Do not attempt to open, repair, or modify this unit. It contains a high-voltage circuit, which may cause a fire, electric shock, or serious injury.

Do not use accessories other than those specified by Eastman Kodak Company. Doing so may cause a fire, electric shock, or other injury.

Do not touch any exposed internal component of the unit if the unit is dropped or damaged, or if foreign matter enters the unit.

Do not operate the unit near the eyes (especially those of infants).

Flashing the unit near someone's eyes may cause visual impairment. Make sure to allow a minimum distance of about 3 ft (1 m) or more from the subject, especially when taking pictures of infants.

Make sure to install the batteries correctly. When replacing batteries, replace both old batteries with a pair of new batteries as recommended on page 3 of this manual. Using batteries of the wrong type or old batteries may result in leakage, heat buildup, rupture, shortened service life, or loose connections.

Keep the unit away from beverages and other liquids, cosmetics or chemicals. Spills or splashes of liquid entering the unit may cause a fire, electric shock or injury.

Do not operate the unit in extremely humid environments, such as a bathroom or near a humidifier. This may result in a fire, electric shock, or injury.

Do not operate the unit if there is any chance that a flammable or volatile gas is present.

Do not expose the unit to splashes, sprays, or water droplets.

Do not expose batteries to a very hot environment or excessive heat such as intense sunlight, fire, etc.

Do not attempt to charge disposable batteries (such as carbon-zinc and alkaline cells).

Do not place the unit in direct sunlight or where it can be exposed to high humidity. This can result in excessive humidity inside the unit, which can cause damage to or failure of the unit.

Do not store the unit in a dusty place; otherwise, subsequent use of the unit may result in a fire or electric shock.

Do not place the unit in an unstable position; otherwise, the unit may fall or drop accidentally, causing damage to the unit or personal injury.

Do not clean the unit with benzene or other solvents. This can result in discoloration or deformation of the unit. Stains or dirt should be removed with a soft dry cloth.

### SAVE THESE INSTRUCTIONS

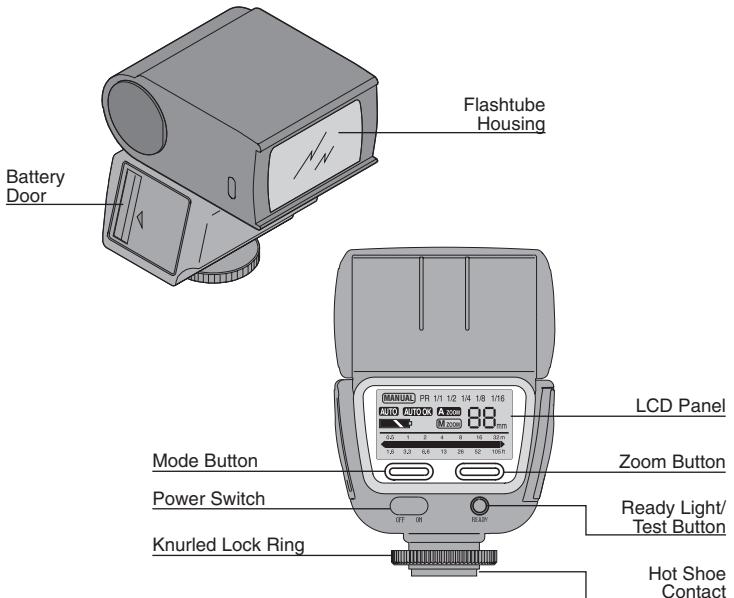
Your Kodak P20 zoom flash is for use with Kodak EasyShare P series digital cameras.

## FEATURES AND FUNCTIONS

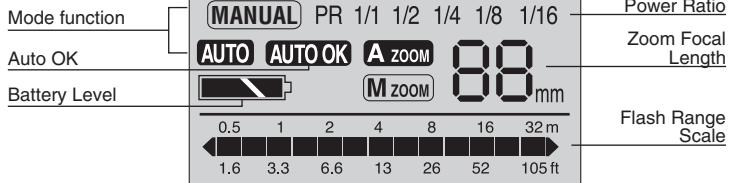
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- Multi-step Auto Power Zoom function automatically provides optical flash coverage matched to the focal length of the lens in use (24–80 mm).
- Choose between Camera Auto Mode and Manual Mode.
- Large, easy-to-read LCD panel displays all the information needed to monitor and control all flash settings. The panel can be illuminated for easy reading in dark conditions. The data display remains on for 5 seconds after pressing the Display button.
- Provides five Manual flash output settings, from full power to 1/16.
- The flash head can be tilted upward incrementally to 90 degrees (vertical), with stops at 45, 60, and 75 degrees, for convenient bounce flash capability.

## OVERVIEW



### LCD Panel



## INSTALLING THE BATTERIES

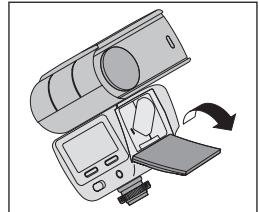
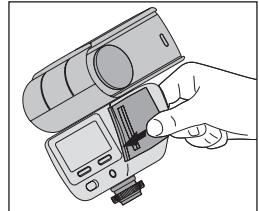
The flash uses two 1.5V AA batteries (not included) and is compatible with alkaline, Ni-MH, oxy-alkaline, and most AA rechargeable batteries. We recommend using Kodak Ni-MH rechargeable digital camera batteries when possible.

1. Slide the power switch to the "OFF" position.
2. Open the battery compartment by sliding the battery door back slightly toward the rear of the unit to unlatch it, then flipping down the door.
3. Insert 2 AA size batteries into the battery compartment according to the polarity indications "+ -". The flash will not operate if the batteries are installed incorrectly.
4. Close the battery door. When the unit is switched on, it will start charging with a slight humming sound and the Ready Light will come on when charging is completed.

NOTE: The flash is ready to fire as soon as the Ready Light is lit. However, full power will not be available for several seconds. Wait a few seconds after the Ready Light activates to achieve maximum output.

If it takes longer than 30 seconds for the Ready Light to come on after the flash is fired in Full Power Mode, replace the batteries.

**CAUTION** Turn the flash unit off before mounting on or detaching from the camera. If it is turned on, the flash unit may self-fire, or damage to the flash unit may result.



## Battery Status

Full		Icon is displayed during power-up and upon waking from the Standby state.
Low		Icon is displayed constantly.
Empty		Icon blinks constantly.

## MOUNTING THE FLASH TO THE CAMERA

1. Slide the power switch to the “OFF” position.
2. Slip the flash unit onto the camera’s hot shoe. Turn the knurled lock ring to firmly affix the flash unit.

**⚠ CAUTION** When using the flash on your camera, hold your camera and not the flash. If you hold on to the flash only, your camera may slip off the flash foot and be damaged, or the weight of the camera may damage the flash foot.

## FLASH CHARGING STATUS

Ready Light	Charging Level	Flash Status
Lit	Fully charged	Ready for full emission
Blinking	Charging	Able to flash at current charge level
Off	Empty	Cannot flash

## POWER SAVE AND AUTOMATIC SHUTDOWN

To save battery life, the flash automatically switches to the Standby state after 5 minutes of inactivity or when your camera goes into LCD Time Out state. The LCD panel and Ready Light turn off. To reactivate the flash, partly depress the camera’s shutter release, or slide the power switch to the “OFF” position and then back to the “ON” position. The flash Ready Light and LCD panel will go on again after a brief delay.

## LCD BACK LIGHT

Use the LCD Back Light to illuminate the LCD panel for easy reading in dark conditions. To turn on the LCD Back Light, press the Mode or Zoom button. After 5 seconds of inactivity, the LCD Back Light automatically turns off.

## MODE BUTTON

The Mode button toggles between:

- **Camera Auto mode**—the amount of flash is determined automatically in accordance with the capture setting on the camera.

Auto OK icon—when the subject is within the auto effective range and there is enough light, the Auto OK icon blinks for two seconds after the flash is fired. If the icon does not appear, then there is not enough light for an exposure. Either move closer to the

subject or set the camera to Aperture Priority mode and select a larger aperture (smaller f-number).

- **Manual mode**—the amount of flash is adjusted manually, with Power Ratio settings of 1/1 (full emission), 1/2, 1/4, 1/8 or 1/16 power. Use the Mode button to toggle through the settings.

NOTE: If the Mode Select button is pressed for more than one second, the mode will change to Camera Auto mode.

## ZOOM BUTTON

The Zoom button toggles between:

- **Auto Zoom mode**—flash focal length is determined automatically in accordance with the capture setting on the camera. The focal length range is 24–80 mm. If the value on the camera is less than or equal to 24 mm, “F mm” is displayed. If no information is received from the camera, “-- mm” is displayed.
- **Manual Zoom mode**—flash focal length is set manually, with settings of 24 mm, 28 mm, 35 mm, 50 mm, or 80 mm.

If the Zoom button is pressed for more than one second, the mode will change to Auto Zoom.

## TEST BUTTON

If the Test button is pressed after the Ready Light goes on, a test flash fires.

## FLASH RANGE SCALE

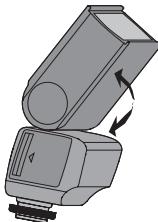
In response to a signal from the camera, the flash calculates the effective flash range and displays it on the LCD panel. This range shows the minimum and maximum distances a proper exposure can be made using the flash. To increase or decrease the effective distances, set the camera to Aperture Priority mode and change the aperture setting. The flash range scale changes as the aperture (f/stop value) is adjusted.

The available range will be displayed when you partly depress the camera’s shutter release or when the Ready Light is on. The flash range is 1.5–100 ft (0.5–30 m) and is indicated by a bar graph. An asterisk indicates distances greater than 100 ft (30 m).

## ADJUSTABLE BOUNCE FLASH HEAD

The P20 flash includes a head that lets you position the light in a number of vertical positions, in all exposure modes. For more pleasing and creative lighting effects, such as softening harsh shadows on a subject, the Bounce Flash Head is adjustable vertically up to 90 degrees, with stops at 45, 60, and 75 degrees.

**⚠ CAUTION** Do not attempt to force the head beyond the available settings, or damage to the flash unit will occur.

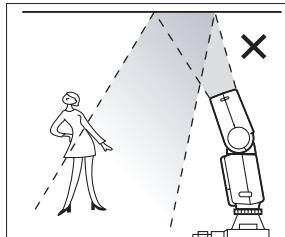
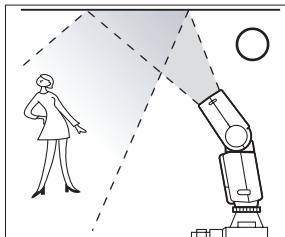


- Partly depress the camera's shutter release to check whether the correct aperture and shutter speed are selected.

**IMPORTANT:** The effectiveness of the bounce flash feature is dependent upon the distance to, and the condition of, the reflecting surface used.

- Aim the flash head at a point on the bounce surface, halfway between the flash and the subject. Normally, when the flash is bounced off a surface, it will lose 25% power or more, even when the surface is white. Therefore, when a bounce flash photo is taken in TTL (through the lens) mode, it is recommended that you select a larger aperture than for a direct flash photograph.

**NOTE:** Bounce your flash off a white surface whenever possible to achieve the best overall illumination level. In color photography, when a colored surface is used for bounce lighting, it reflects its color on the subject. When indoors, use a white ceiling of 20 ft (6.1 m) or lower.



Direct Flash



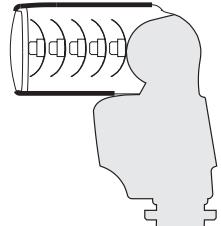
Bounce Flash

## POWER ZOOM HEAD

The P20 flash is equipped with a motorized zoom head. It is controlled by the camera and is set automatically to provide optimal flash coverage for the focal length of the lens in use. It can even select intermediate settings within the 24–80 mm focal length range. Or, you can manually set it to 24, 28, 35, 50, and 80 mm by using the Manual Zoom mode.

**NOTE:** Auto Power Zoom works only with lenses of 24 mm or greater focal length.

24 28 35 50 80 mm  
↓ ↓ ↓ ↓ ↓



Without Power Zoom Head



With Power Zoom Head

## TECHNICAL SPECIFICATIONS

<b>Power Zoom</b>	Automatic setting – Signal from camera
<b>Color Temperature</b>	Manual setting – Pressing the Zoom button 5600 K ±400 K at full power output
<b>Flash Duration</b>	1/800 sec. at 1/2 power output
<b>Operating Temperature</b>	0–40° C (32–104° F)
<b>Dimensions</b>	83.8(L) x 62.4(W) x 93(H) mm (3.3 x 2.5 x 3.7 in.)
<b>Weight</b>	199 g (7.0 oz.), without batteries

### Guide Number: ISO 100 (m/ft)

Zoom Setting		24 mm (0.9 in.)	28 mm (1.1 in.)	35 mm (1.4 in.)	50 mm (2.0 in.)	80 mm (3.1 in.)
Manual flash	1/1	24/78	26/85	28/92	34/111	40/131
	1/2	17/56	18/59	20/66	24/78	28/92
	1/4	12/40	13/43	14/46	17/56	20/66
	1/8	8/26	9/30	10/33	12/40	14/46
	1/16	6/20	6/20	7/23	8/26	10/33

### Working Range (m/ft)

Zoom Position		24 mm (0.9 in.)	28 mm (1.1 in.)	35 mm (1.4 in.)	50 mm (2.0 in.)	80 mm (3.1 in.)
F/2		12/39	13/43	14/46	17/56	20/66
F/4		6/20	6.5/21	7/23	8.5/28	10/33
F/8		3/9.8	3.3/11	3.5/11	4.3/14	5/16
F/16		1.5/5	1.6/5.3	1.8/5.7	2.1/7	2.5/8.2

### Number of Flashes and Recycling Time

	Number of Flashes*	Recycling Time**
AA alkaline batteries	Approx. 100	Approx. 10 sec.
AA Ni-MH batteries	Approx. 140	Approx. 8 sec.

\* Measured with new batteries that are within 3 months from their date of production, flashed every 30 seconds continuously, and recycled to the point at which the Ready Light takes 30 seconds to come on after the last flash.

\*\* The time to activate the Ready Light under the above conditions.

NOTE: The design and specifications of this product are subject to change without prior notice.

## TROUBLESHOOTING

Problem	Solution
Flash doesn't fire	Clean hot shoe area; remove any dust or dirt. Make sure flash is securely fastened to camera—is knurled ring tight?
No power	Make sure batteries are charged and positioned properly.
Flash takes a long time to recharge	Recharge batteries or use fresh batteries.
Flash picture is too dark	Allow flash to fully charge. Set camera to Aperture Priority mode and open the aperture by one or more stops. If bounce is used, make sure the surface is reflective enough and not taller than 20 ft (6 m).
Dark corners in flash pictures	Make sure flash is set to the proper zoom setting. Use flash with lenses 24 mm or greater (35 mm equivalent).
Subject is too bright in flash pictures	Use flash in Auto mode and set camera to Aperture Priority mode, and close the aperture by one or more stops.

## FCC compliance and advisory

### Kodak P20 zoom flash

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed or used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: 1) reorient or relocate the receiving antenna; 2) increase the separation between the equipment and the receiver; 3) connect the equipment to an outlet on a circuit different from that to which the receiver is connected; 4) consult the dealer or an experienced radio/TV technician for additional suggestions.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. Where shielded interface cables have been provided with the product or specified additional components or accessories elsewhere defined to be used with the installation of the product, they must be used in order to ensure compliance with FCC regulation.

## Canadian DOC statement

DOC Class B compliance—This Class B digital apparatus complies with Canadian ICES-003.

Observation des normes-Class B—Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

## Australian C-Tick



## Waste Electrical and Electronic Equipment Labeling

In the European Union, do not discard the product as unsorted municipal waste. Contact your local authorities or go to [www.kodak.com/go/recycle](http://www.kodak.com/go/recycle) for recycling program information.

## Étiquetage DEEE (directive sur les déchets d'équipements électriques et électroniques)

Dans l'Union Européenne, ne jetez pas ce produit avec les ordures ménagères non triées. Pour obtenir plus d'informations sur le programme de recyclage, adressez-vous aux autorités locales ou visitez le site Web à l'adresse suivante : [www.kodak.com/go/recycle](http://www.kodak.com/go/recycle)

## Abfallkennzeichnung für Elektro- und Elektronikaltgeräte

Entsorgen Sie das Produkt in der EU nicht im Haushmüll. Wenden Sie sich an die zuständige Behörde vor Ort, oder informieren Sie sich im Internet unter [www.kodak.com/go/recycle](http://www.kodak.com/go/recycle) über eventuelle Recyclingprogramme.

## Etichettatura conforme alla direttiva WEEE (Waste Electrical and Electronic Equipment)

Nei paesi dell'Unione Europea, non smaltire l'unità come prodotto urbano. Contattare gli enti locali preposti o visitare il sito Web [www.kodak.com/go/recycle](http://www.kodak.com/go/recycle) per informazioni sui programmi di riciclaggio.

## Etiqueta para el desecho de equipos eléctricos y electrónicos

Dentro de la Unión Europea, este producto no se puede desechar en basureros municipales. Comuníquese con las autoridades locales o visite el sitio de Kodak en [www.kodak.com/go/recycle](http://www.kodak.com/go/recycle) donde encontrará información sobre programas de reciclaje.

## Selo da Diretiva Européia WEEE

Nos países da União Européia, não descarte o produto como lixo doméstico não classificado. Contate as autoridades locais ou visite [www.kodak.com/go/recycle](http://www.kodak.com/go/recycle) para obter informações sobre programas de reciclagem.

## 전기, 전자 제품 폐기 표시

유럽 연합국에서는 이 제품을 폐기물로 버리면 안 됩니다. 재활용 프로그램에 대한 자세한 정보를 얻으려면, 지역 관할 당국에 문의하거나 [www.kodak.com/go/recycle](http://www.kodak.com/go/recycle)을 참조하십시오.

## 废弃电子电气设备标记

在欧盟，不可将本产品当作未分类的城市废物弃置。有关回收计划的信息，请联系您当地的机关或转到 [www.kodak.com/go/recycle](http://www.kodak.com/go/recycle)。

## 電子電機設備廢棄物指令標誌

若您位於歐盟地區，請將此產品當作一般廢棄物丟棄。如需回收計畫資訊，請與當地機關聯繫，或造訪：[www.kodak.com/go/recycle](http://www.kodak.com/go/recycle)。

## 廃電気電子機器に関するラベル

EU（欧洲連合）諸国では、本製品を無分別の都市ゴミとして廃棄しないでください。リサイクルプログラムに関する情報については、最寄りの自治体に問い合わせるか、[www.kodak.com/go/recycle](http://www.kodak.com/go/recycle) を参照してください。

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